



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/802,903

03/17/2004

Jiten Chatterji

HES 2003-IP-012582U1

4629

28857

7590

09/17/2004

CRAIG W. RODDY
HALLIBURTON ENERGY SERVICES
P.O. BOX 1431
DUNCAN, OK 73536-0440

EXAMINER

SUCHFIELD, GEORGE A

ART UNIT

PAPER NUMBER

3672

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,903

Applicant(s)

CHATTERJI ET AL. *ST*

Examiner

George Suchfield

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) 41-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21-40 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☒ Claim(s) 1-67 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/17/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3672

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-40, drawn to a method of cementing a zone in a subterranean formation, classified in class 166, subclass 293.
- II. Claims 41-67, drawn to a composition, classified in class 106, subclass 696.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the composition or product of the Group II invention could be used in other cementing applications other than the subterranean formation cementing process of the Group I invention, e.g., it could be used in building, dam or highway construction, or as a sealing agent in a sewer repair operation.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Craig Roddy on August 19, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-40.

Affirmation of this election must be made by applicant in replying to this Office action. Claims

Art Unit: 3672

41-67 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 6-9, 23 and 27-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6, 7, 23 and 27 are deemed indefinite as being drawn to an improper Markush grouping with respect to the recitation(s) "comprises a Portland cement ... or a mixture thereof", and "comprise polyethylene, ... and/or polystyrene particles" since the claim language "comprises" may include components or members outside of the listed species. This rejection could be overcome if the term "comprises" or "comprise" were amended to read, e.g., -- selected from the group consisting of --. It is further noted with respect to claims 6 and 23, it is not clear exactly what comprises "a high alkalinity cement". Thus amendment and/or clarification, e.g., is this an art-recognized term(?), is required

Similarly, claims 8, 9, 28 and 29, which depend from claims 7 and 27, respectively, are indefinite in view of the language "comprise", which fails to limit each claim to the recited

Art Unit: 3672

species. Instead, the claim language should, e.g., read -- the inelastic lost circulation material particles are polyethylene particles -- .

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-7, 17, 21-27 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Boles et al (5,736,594).

Boles et al (note col. 1, lines 44-64; col. 2, lines 20-67) discloses a process of cementing a well utilizing a pumpable cementing slurry comprising a cement, water, other additives and a lost circulation agent comprising particles of ground-up recycled polystyrene. It is deemed that such polystyrene particles are inherently "inelastic", as called for in claims 1 and 20, insofar as polystyrene, per se, would normally be characterized as comprising a hard solid material.

Moreover, the use of polystyrene particles is specifically recited in claims 7 and 27.

As per claims 3, 4, 26 and 26, Boles et al (col. 3, lines 13-22) in a preferred embodiment may employ a cementing slurry comprising "38% water by weight of the cement".

As per claims 17 and 30, it is noted that one or more of the additives recited are encompassed by the cement slurry additives disclosed in Boles et al (note col. 2, lines 44-49).

Moreover, all the additives recited appear conventional and/or commercially available in the well cementing art.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 3, 4, 10, 11, 15, 16, 18, 19, 25, 26, 31-34 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boles et al (5,736,594).

As noted above, Boles et al discloses a process of cementing a well utilizing a cementing slurry comprising a cement, water, other additives and a lost circulation agent comprising particles of ground-up recycled polystyrene.

It is deemed that the precise amount of water utilized in the cementing slurry of Boles et al, as called for in claims 3, 4, 25 and 26, would have been an obvious matter of choice or design for one of ordinary skill in the art in carrying out the method of Boles et al based on, e.g., the

characteristics and properties of the particular subterranean formation(s) or wellbore environment actually encountered in the field and/or the result of routine experimentation carried out for process optimization/economic feasibility.

Similarly, the particle size ranges of the polystyrene particles used as a lost circulation agent in the well cementing process of Boles et al, as recited in claims 10, 11, 33 and 34; the concentration range(s) of polystyrene particles in the cementing slurry, as recited in claims 15, 16, 38-40; and the density of the well cementing slurry, as recited in claims 18, 19, 31 and 32, would all have been obvious matters of choice or design for one of ordinary skill in the art in carrying out the method of Boles et al based on, e.g., the characteristics and properties of the particular subterranean formation(s) or wellbore environment actually encountered in the field and/or the result of routine experimentation carried out for process optimization/economic feasibility. Moreover, no criticality or unexpected results are observed from such process operating ranges.

14. Claims 12-14 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boles et al (5,736,594) as applied to claims 1 and 20 above, and further in view of the Halliburton Brochure "KWIK-SEAL Lost Circulation Additive".

Boles et al does not disclose the relative particle size(s) and corresponding range(s) of their polystyrene lost circulation particles, however, the Halliburton brochure discloses that their exemplary lost circulation additive, KWIK-SEAL, is commercially available in a coarse, medium and "fine grind" size.

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to formulate or provide the lost circulation agent polystyrene particles in such

Art Unit: 3672

relative size ranges, in carrying out the process of Boles et al, in view of Halliburton brochure, in order to enhance the overall lost circulation effectiveness of the Boles et al cementing slurry.

It is further noted that Halliburton elaborates as to what formation/wellbore conditions are particularly addressed by the respective relative size ranges, e.g., coarse vs. fine grind. Accordingly, it would have been an obvious matter of choice or design to one of ordinary skill in the art to which the invention pertains, to select concentration ranges, as set forth in claims 12-14 and 35-37, of the respective relative size particles in carrying out the modified process of Boles et al, based on the matrix characteristics, such as the presence or degree of large fractures and/or "medium-to-fine" fractures of the formation(s) actually encountered in the field, following the overall guidelines set forth in the Halliburton brochure.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited references disclose the use of exemplary lost circulation agents and/or well cementing slurries in processes of cementing or completing a well. It is noted that the cited references to Messenger (4,579,668) and Watanabe (3,316,965) disclose the use of lost circulation agents comprising or formulated from polyethylene, however the resulting lost circulation agent(s) does not appear to encompass inelastic lost circulation particles comprising polyethylene particles, e.g., as called for in claim 8.

16. Claims 8, 9, 28 and 29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.


Art Unit: 3672

17. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 703-308-2152. The examiner can normally be reached on M-F (6:30 - 3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 703-308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


George Suchfield
Primary Examiner
Art Unit 3672

Gs
September 9, 2004